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## M. FROIDEVAUX'S PARIS LETTER.

PARIS, May 20, 1902.

Side by side with the Service Géographique de l'Armée, of which I have written in the BULLETIN, is the Service Hydrographique de la Marine, which holds, with regard to nautical geography, a position deserving of no less careful study than that accorded to the important geographical institution under the Ministry of War.

It was on the 19th of November, 1720, that Louis XV created the Depository of Marine Charts and Plans, the germ of which seems to have been a special establishment, as yet very little known. In the last thirty years of the XVIIth century Colbert and Seignelay required the Royal engineers to survey the coasts of France, and occasionally foreign coasts. From this period date the first trustworthy marine charts and the labours, the results of which are given in the *Neptune François*, published in 1693, and it was then that there were brought together in Paris the documents which constituted in 1720 the first series of the Depository of Charts and Plans, Journals, and Memoirs relating to navigation. This establishment, the oldest of the kind, antedating those of England and the United Provinces by nearly twenty years, was under the charge of the Chevalier de Luynes, who was succeeded by a number of general officers, including the illustrious Marquis de La Galissonnière; but the soul of the new establishment was Jacques Nicolas Bellin, who entered it in 1721, formed its collections, and drew its first charts. These bear the date of 1737, and represent, therefore, the obscure labour of sixteen years. Compiled as they were from the most diverse elements, the maps were superior to those which had previously appeared. The chart of the Mediterranean in three sheets amply proved the utility of the new institution, and Bellin obtained in 1741 the title of Hydrographic Engineer of the King. From that time the charts were engraved at his expense and sold for his account. Engineers directed and controlled by him designed nautical charts from materials furnished by log books and the observations of seamen, and these became the *Hydrographie Française*.

Bellin died in 1772, and his establishment underwent a temporary eclipse. It revived, however, and its organization remained the same until the Revolution. The charts and plans were constructed more scientifically and with greater care, but the engineers gathered their material from the institution itself, and took part in actual survey only on rare occasions.

A change was made after the 29th of Thermidor, An III (July 16, 1795), when Beautemps-Beaupré became Director. Under him was constituted the corps of Marine Hydrographic Engineers, which was definitively organized in 1814, and was actively engaged in every department of the service by the year 1816. Reconnaissances had already been made under Napoleon on the coasts of the English Channel, the Atlantic, and the Adriatic. With 1816 began the regular survey of the western coast of France, terminated in 1838; then followed the Mediterranean coast (1839-1844), and the Italian (1845-1847). Reconnaissances were pursued at the same time in Corsica, Sardinia, Algeria, Senegal, Brazil, and Martinique, and voyages of circumnavigation and discovery (*La Coquille, la Vénus, la Bonite, l'Astrolabe, la Zélée, etc.*) were made to the most distant seas. It is the period of great scientific activity in the Dépôt des Cartes et Plans, and this activity was maintained in the second half of the XIXth century. There were no expeditions like those of Duperrey, Dumont d'Urville, and others, but hydrographic surveys were continued in all directions; in Italy to the Strait of Messina, in Spain, Morocco, in the Strait of Gibraltar, in Algeria and Tunisia, in Madagascar, Cochin China and Tonkin, in Japan, in New Caledonia, in Brazil, Guadeloupe, and Newfoundland. The Corsican coast survey has been completed, and the work done on the coasts of France has been subjected to an uninterrupted systematic revision, since the year 1865.

Something must be said of two Congresses held since my last communication. One, the National Congress of French Geographical Societies, met for its 23d session at Oran, in the first week of April, under the presidency of M. Gabriel Hanotaux, of the French Academy. At the same time the City of Oran was celebrating the 1,000th anniversary of its foundation. Some of the communications brought before the Congress were of a kind too often made at such gatherings; others possessed a genuine value. Among these were a paper by M. Augustin Bernard on the natural characteristics of the Oran territory, and one by M. Bel on the *chotts*\* and the *sebkhas*\* of Algeria; besides a study of the ports in Oran by M. Bernard, and M. Miramont's paper on the free markets in southern Oran. An interesting discussion on the subject of assimilating the native populations brought out the expression of opinions formed from a rigorous comparison of facts. Two excellent papers on Morocco must be noted—that by the Comte de

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\* *Chott*, a salt lake which dries up in summer; *sebkha*, a salt lagoon, a lacustrine depression.

Castries on the present state of our geographical and historical knowledge of the country, and that of M. de Ségonzac, showing the results of his journeys in the least-known parts of the Empire, and illustrated by his maps and photographs. It is to be regretted that nothing was heard from MM. E. Doutté and G. B. M. Flamand; but the Congress was successful, and the excursions which followed added to its interest. These excursions were to Tlemcen and the west of the Oran territory, on the one hand, and on the other across the Tell and the High Plateaux to the southern slope of the Saharan Atlas as far as Aïn Sefra and Duveyrier, from which point the tourists commanded the stony Hammada stretching away to the horizon, and toward the southwest the palm-groves of Figuig.

In the same week of April the Congress of Learned Societies was held in Paris. At this, papers were read on physical geography, the history of geography, and historical geography, and even on Americanism, Dr. E. T. Hamy having submitted an interesting archæological map of the Orinoco; while M. Lejeal, professor at the College of Melun, described the excavations of Mr. Saville at Mitla. These papers, together with those of MM. A. Pawlowski and Saint-Jours on the alterations of the French shore in the regions of Arvert and Vaux and in Gascony, and of M. Fabre on the evolution of the forms of the terrain in Lower Gascony, will no doubt be published in the *Bulletin de Géographie Historique et Descriptive*. M. Charles Rabot and M. Vidal de la Blache spoke on the subject of glaciers, and M. Rabot described the ancient roads across the mountainous regions of France; M. Chantre laid before the Section an archæological map of the Department of Saône-et-Loire; and other communications deserve particular mention. Among these was a study by M. Gabriel Marcel of a map of Picardy by Truchet (XVIth century), a paper by M. Saint Yves on the first accounts of the French and English Antilles, one by M. J. de Dampierre on the first historians of the French Antilles (and particularly on Father du Tertre and his original texts), and one by M. Pelletier on an Episode of the French explorations in North America for the discovery of the sea in the west. This last paper is to appear in the *Bulletin* published by the Committee.

At meetings of the Section of Science, in the same Congress, MM. E. A. Martel and Armand Viré spoke on the geological and biological study of caves, M. Ferrasse presented a study of the Causse Minervois (Department of Hérault), and M. Belloc treated the subject of the lacustrine dams and the lake reservoirs of the Pyrenees.

Mention must also be made of Dr. Magnin's notes on his new researches concerning the vegetation of the 68 lakes in the Jura; of those of M. Malinvaud on the flora of the Lot Department, and of M. A. Lacroix's study of the mineralogy of Madagascar, its rocks and stones and its precious metals.

These are the principal recent manifestations of geographical activity to be noted here; but we must not overlook the communications made to the Société de Géographie by travellers whose reports have not yet been published. M. Edmond Doutté, author of a valuable Journey in Morocco, after tracing the road from Marrakesh to the Upper Atlas, the aspect of the mountains and the gorges that lead to the valley of Gountaï, described the present condition of Tin Mêl, the ancient capital of the Almohade dynasty, the ruins of which he discovered in the heart of the Atlas and photographed. He furnished also valuable details on the Berbers of Morocco, the *Chleuh*, whom he visited, and the *Berâber*, lately studied by M. de Ségonzac; he showed that the populations of Grande-Kabylie, in Algeria, present a more ancient and less Islamitic type, that all these Berbers of Morocco, though strongly resembling each other and resembling those of Algeria, form populations without cohesion, from a social point of view. Only one bond holds them together, that of religion—Islam, which has assumed in North Africa, and particularly in Morocco, a special tint, and has accommodated itself to the faiths which preceded it. The ancient rites and the ancient divinities have been covered by the worship of saints—maraboutism; the marabouts have captured the living forces of society in Morocco; under the name of *Sherifs* they maintained the struggle against Spain and Portugal in the XVth and XVIth centuries, and after having saved Morocco, founded their government. This address was both archæological and ethnographic; that of M. G. Grandidier, on the southern portion of Madagascar (south of the Onilahy and west of the Mandrare), was devoted to the physical geography of a region almost unknown until explored by him in 1901. This part of Madagascar consists of a vast calcareous plateau, with a mean elevation of 120 to 150 metres (400 to 500 feet), and characterised by extreme dryness, which has wholly changed the aspect and the forms of animal life. The inhabitants, Antandroys and Mahafalys, live for several months of the year on the cactus fruit and drink the juice of the leaves, extracted by crushing. Arid and uncultivated as it is, the country is well peopled and furnishes some resources, chief among which are cattle and india rubber. Besides his observations of all kinds, M. Grandidier brought back with him notes and itineraries on a scale of

1:200,000—more especially of the route from Fort Dauphin to Tuléar, by Cape St. Mary.\*

Commander Bourgeois, Chief of the Geodetic Mission to Ecuador, sends a report of the operations in 1901-1902. After transporting their material from Guayaquil to Riobamba, the party set to work and completed most of the fundamental operations—the measurements of a primary base at Riobamba; the latitude of the extremities of the arc (in the north Tulcan and Païta in the south); fundamental latitudes and longitudes at Riobamba and Quito, and a base for verification at Tulcan. Notwithstanding the obstacles due to the lack of means of communication in the mountains, the programme arranged for the year 1901 was entirely completed. There remain to be carried out the measurements of angles and the complementary astronomical measurements—the work of the next three years.

There is little to be said of explorations in progress. M. Thomann, who was charged with the duty of uniting Capt. Blondiaux's itineraries with a point on the Guinea Coast, and of ascending the course of the middle Sassandra, has succeeded in both aims. Crossing the country of the Bétés, the Baninas and the Los, he reached Séguéla and laid down definitively the course of the Sassandra, confirming in this way the views of Capt. d'Ollone as to the possibility of penetrating by peaceful measures into the hitherto inaccessible districts to the west of Bandama. A scientific party, under the leadership of M. Aug. Chevalier, already known by excellent works on Senegal and the western Sudan, has just started for the French Congo and the banks of the Shari.

M. Dessirier de Paurvel has found that the identification of the Bali with the Likuala-aux-Herbes (Likuala-Essudi?) is incorrect. The latter is a small stream, the outlet of a marsh; the Bali is identical with the Lobai.

In Indo-China Dr. H. Reboul has carefully studied the Lang-Sa plateau.

The number of new books is never great at this season of the year. Attention may be called to the second volume of the work on the French Colonies, noticed in my last letter. This second volume treats of the French Congo, the colonies of the Indian Ocean, those of the Pacific, and of America. A number of appendices—on the French population of North America, on the aids to colonisation, on colonial bibliography—add to the value of the work.

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\* The *Revue de Madagascar* published in April the journal of a companion of M. Grandidier's, Sergeant Baldauf, from the lower Manambovo to Tuléar.

At the Académie des Sciences, M. A. J. Boudariet presented, in February, a geological map of Bambouk (in eastern Senegal) on a scale of 1:250,000, accompanied by a study of the structure of the country, of which very little was previously known, although it was recognized as a gold-bearing region in the XVIII century.

In M. Gentil's book, *La Chute de l'Empire de Rabah*, will be found a very soberly-written account of the interesting events which preceded and prepared the overthrow of the Rabist power. There are valuable appendices on the missions of Béhagle and Bretonnet, as well as on the geographical results obtained by M. Gentil and his fellow-workers. Something must be said of the paper published by M. G. Saint Yves in the *Annales de Géographie* under the title of *À travers l'Érythrée italienne*. It excellently characterises the three bordering regions—Erythraean, Abyssinian, and Nilotic.

In a volume entitled *Madagascar au Début du XX<sup>e</sup> Siècle* are brought together the lectures delivered at the Muséum d'Histoire Naturelle, in 1901, by Dr. Raphael Blanchard and his scientific collaborators. The work is admirably illustrated, and is dedicated to M. Alfred Grandidier, "whose memorable explorations prepared the conquest of the great African island."

Another timely work is the report of M. Paul Doumer, Governor-General of French Indo-China, on the *Situation de l'Indo-Chine* (1897-1901). It is full of figures and of facts of great interest, and is accompanied by a map on a scale of 1:3,000,000 by the Geographical Service of Indo-China.

M. Henri Vignaud's important work on Toscanelli's letter and map continues to attract the attention of historians. Some admit the author's theories, at least in general; others absolutely reject them. Of these is M. Lucien Gallois, who, in an article in the *Annales de Géographie*, positively refuses to accept M. Vignaud's thesis, and adheres to the opinion currently received down to the year 1900. M. Gabriel Marcel is much less confident of the correctness of the ancient theories. His excellent study in *La Géographie*, of April, does full justice to the importance of M. Vignaud's work, and recognises that from his labours and those (still unpublished) of M. Gonzalez de la Rosa there will at last come forth the truth concerning Columbus, "already seriously damaged by previous publications," and concerning the history of the discovery of America.

HENRI FROIDEVAUX.